

# Georgia Department of Natural Resources

205 Butler Street, S.E., East Floyd Tower, Atlanta, Georgia 30334

Joe D. Tanner, Commissioner  
Harold F. Rehels, Director  
Environmental Protection Division

August 1, 1991

## MEMORANDUM

SITE: GE ROME  
BREAK: 20.1  
OTHER: \_\_\_\_\_

TO: Harold Rehels

FROM: Randall Manning *RM*

10090640



SUBJECT: PCBs from GE facility

As you know, I have been asked on several occasions by Dr. Brian Hughes, a toxicologist with the Public Health Department in Alabama, what the situation is concerning the GE facility in Rome, Georgia. Apparently, analyses of fish tissue in Alabama from the Coosa River (Lake Weiss) are continuing to yield high concentrations of PCBs and Dr. Hughes wants to know if there could be any continued input from the Georgia facility. I also have been concerned after seeing the last few years' data from the Coosa river. Briefly, from 1977 to 1984 the values for PCBs monitored in catfish from the Coosa River decreased dramatically ( $\approx$  30 ppm to 1 ppm). After 1984, the changes on a year by year basis have not been dramatic. During the last three years other species of fish have been collected and the results indicated that certain species (Striped bass, White bass, and Smallmouth buffalo) have significantly higher PCB concentrations than Channel catfish. Because data for these species have not been collected over the entire study period, it is not possible to determine whether they originally had much higher concentrations than catfish and have also declined over time. I have noticed that the sample size for catfish is restricted to a very narrow range of approximately 1 lb, which is a young fish without tremendous fat accumulation. The size of the other species that have been sampled in the last few years has ranged from 5 to 10 lbs. Because of the much larger size of these fish we may be seeing nothing more than differences due to accumulation of PCBs as a result of increased age and fat content. It should also be noted that all the catfish are sampled from one location within 2 miles of the Georgia-Alabama state line, while the other species of fish are taken from three different sites between the state line and the Lock and Dam ( $\approx$  2/3 of the distance from the state line to Rome).

What follows is a brief list of things I have discovered concerning the facility in the last 15 years.

- the facility in question is a Medium Transformer Operation Facility.
- plant generated wastes were disposed at three areas of the plant site in landfills A, B, and C until 1975.

-Landfill A was used from 1952 until 1970, landfill B was used in 1975, and landfill C was used from 1970 to 1975.

-in 1975, GE officially closed the landfills, EPD inspected the closed landfills and concluded that the closures were appropriate.

-In ~~~ 1976-1977~~ an industrial wastewater permit was issued to GE for 10 ppb PCBs, ~~~ 2 years ago~~ it was changed to 2 ppb (Industrial Wastewater tells me it sometimes measures 3-6 ppb). The facility has 4 combined ~~sewer~~ *storm water* overflow points, 2 points are treated prior to release and 2 are not.

-the facility also releases water in the city sewer system. Municipal Wastewater tells me that ~~~ 10 years ago~~ the city sewer was cleaned and a permit was issued for 1 ppb PCBs. The city has not exceeded that permit in the last 10 years.

-after enactment of RCRA in 1984, EPD concluded that the landfills were subject to regulation as inactive landfill sites. The facility submitted a RCRA Part B permit application in 1985 and EPD requested that GE investigate the possibility of ground water contamination at the facility.

-Law Environmental Services performed the preliminary investigation of the landfill areas in the spring of 1986. The investigation included review of aerial photographs and a geophysical survey to evaluate the approximate boundaries of the former landfills.

-In August 1987, Dames & Moore installed eleven ground water monitoring wells at the site and in January 1988, four additional ground water monitoring wells were installed. The wells have been sampled on a quarterly basis with Dames & Moore submitting reports after each quarter.

-Metals, PCBs, and chlorobenzenes have been detected in some of the wells at the site. PCBs have consistently been detected in wells A-4 and A-5 (which are located on the eastern side of Landfill A) in 1989 and throughout 1990. Total PCB concentrations have increased progressively each succeeding quarter through 1990. Total PCBs in A-4 and A-5 were 160,000  $\mu\text{g/l}$  (160 ppm) and 17,000  $\mu\text{g/l}$  (17 ppm), respectively, in December 1990. However, values for these wells in March 1991 had dropped significantly.

1990 AL  
5 x 10<sup>-6</sup> ppm  
5x

-A consent order was issued on March 22, 1991 by EPD requiring GE to remove floating product (mineral spirits) and remediate contaminated ground water to background at well B-2.

-Sediment samples taken by Water Protection show PCB contamination of sediment (3 to 4 ppm) in late 1989 very near the facility at Little Dry Creek at U.S. 27. Other samples taken in the area at Horseleg Creek and the Coosa River downstream of the Rome WPCP revealed low concentrations (44 to 150 ppb) which are considered normal for the area. ?

As I was going through this material, I discussed my concerns regarding PCB contamination and the high concentrations of PCBs in wells A-4 and A-5 with Lael Butler, the geologist assigned to the facility. Lael suggested that the increase in PCB concentrations in those wells, followed by the decrease in 1991, may be the result of a flushing phenomenon of the ground water in the area. Lael believes corrective action is required at Landfill A and has suggested that the consent order be modified. Attached is a summary of the monitoring data, Lael's summary and recommendations, and my summary of the fish tissue data.

I would like to handle this as informally as possible with my colleague in Alabama. I have developed a very good working relationship with him and feel that I could convey this information verbally without causing undue alarm. If any written information is requested as a result of that phone conversation, I would get your approval of course. Please let me know how you feel about this.

As a side note, we should consider more intensive monitoring of other fish species in the Coosa River. More information would allow us to update our advisory in that area.

	PCB Concentrations (mg/kg)		Body Weight (gm)		N
	Mean	± S.E.	Mean	± S.E.	
<b>1990</b>					
Channel Cat Fish	0.39	0.10	414	24	31
Small Mouth Buffalo	13.09	1.67	2070	80	49
<b>1989</b>					
Channel Catfish	1.32	0.18	445	19	28
Small Mouth Buffalo	7.05	1.12	1863	100	31
Stripped Bass	5.20	0.74	2643	339	14
<b>1988</b>					
Channel Catfish	1.39	0.27	710	119	42
Flathead Catfish	2.97	1.31	2589	211	10
White Catfish	1.28	0.99	633	17	2
Blue Catfish	2.20	1.21	4224	2598	3
Small Mouth Buffalo	12.84	8.73	2463	441	6
Stripped Bass	3.21	1.07	1484	407	5
Largemouth Bass	0.50	0.12	671	34	8
White Bass	2.80	2.27	484	64	3
Black Crapple	0.74	0.21	389	36	8
White Crapple	0.50	0.14	220	75	4

JUL 26 '95 03:39PM DNR EPD HAMB

**LANDFILL 'A'**  
General Electric, Rome

Compound	Date	Groundwater Monitoring Wells/Concentrations (ppt)										
		A3-S	A4-S	A5-D	A6-D	A7-D	A8-D	A9-D	A10-D	A11-S	A12-S	A13-S
Aroclor 1242 (PCB)	3/89	ND	16,000	70	ND	ND	ND	ND	NA	NA	NA	NA
	10/89	ND	100	1,603	341	ND	ND	ND	NA	NA	NA	NA
	12/89	ND	1,760	120	100	ND	ND	ND	NA	NA	NA	NA
	6/90	ND	2,980	372	ND	ND	ND	ND	ND	ND	ND	ND
	10/90	ND	29,600	239	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260 (PCB)	12/90	ND	48,700	4,850	ND	ND	ND	ND	ND	ND	ND	ND
	3/91	ND	6,130	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3/89	ND	10,000	310	ND	ND	ND	ND	NA	NA	NA	NA
	10/89	ND	100	2,364	318	ND	ND	ND	NA	NA	NA	NA
	12/89	ND	2,063	113	ND	ND	ND	ND	NA	NA	NA	NA
Tetrachlorobenzenes	6/90	ND	9,430	557	ND	ND	ND	ND	ND	ND	ND	ND
	10/90	ND	54,400	267	ND	ND	ND	ND	ND	ND	ND	ND
	12/90	ND	49,900	4,820	ND	ND	ND	ND	ND	ND	ND	ND
	3/91	ND	6,700	ND	ND	ND	ND	ND	ND	ND	ND	ND
	3/89	ND	73	ND	ND	ND	ND	ND	NA	NA	NA	NA
1,3-Dichlorobenzenes	2/90	ND	50	ND	ND	200	ND	ND	NA	NA	NA	NA
	6/90	ND	4,480	ND	ND	ND	22	ND	NA	NA	NA	NA
	10/90	ND	5,500	ND	15	20	41	19	ND	ND	ND	ND
	12/90	ND	830	ND	ND	340	28	ND	ND	ND	ND	ND
	3/91	ND	680	ND	ND	360	19	15	ND	ND	ND	ND
1,2-Dichlorobenzenes	3/89	18	ND	ND	ND	ND	ND	ND	NA	NA	NA	NA
	10/89	ND	38	ND	ND	ND	ND	ND	NA	NA	NA	NA
	12/89	ND	ND	ND	ND	28	ND	ND	NA	NA	NA	NA
	2/90	ND	ND	ND	ND	108	ND	ND	NA	NA	NA	NA
	4/90	ND	240	ND	ND	170	ND	180	NA	NA	NA	NA
	6/90	ND	95	ND	ND	45	ND	22	ND	ND	ND	ND
	10/90	ND	71	ND	ND	ND	ND	28	ND	ND	ND	ND
	12/90	ND	17	ND	ND	14	ND	ND	ND	ND	ND	ND
	3/91	ND	60	ND	ND	70	ND	58	ND	ND	ND	ND
	6/90	ND	104	ND	ND	62	ND	ND	ND	23	ND	ND
	10/90	ND	106	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12/90	ND	31	ND	ND	35	19	ND	ND	16	ND	ND
	3/91	ND	80	ND	ND	85	ND	ND	ND	ND	ND	ND

Compound	Date	Groundwater Monitoring Wells/Concentrations (ppm)			
		C-3	C-6	C-7	C-8
Lead	12/89	ND	0.09	0.06	2.49
	2/90	ND	0.30	0.14	0.72
	4/90	ND	1.89	0.14	1.70
	6/90	ND	0.67	0.03	0.02
Zinc	12/89	ND	ND	28.90	ND
	2/90	ND	ND	5.61	ND
	4/90	ND	ND	ND	ND
	6/90	0.02	ND	2.07	ND
Manganese	12/89	ND	ND	ND	ND
	2/90	0.28	ND	ND	ND
	4/90	ND	ND	ND	ND
	6/90	ND	ND	ND	ND
Chromium	12/89	ND	ND	ND	ND
	2/90	0.08	ND	ND	ND
	4/90	ND	ND	ND	ND
	6/90	ND	ND	ND	ND

Footnotes:

Parameter	MCL (ppm)
Lead	0.05
Manganese	0.05
Chromium	0.05
Zinc	5

LANDFILL C and WELL D-1  
 General Electric, Rome

Compound	Date	Groundwater Monitoring Wells/Concentrations (ppb)											
		1,4-Dichlorobenzene	1,2,4-Trichlorobenzene	Zinc (ppm)	1,4-Dichlorobenzene	1,2,4-Trichlorobenzene	Zinc (ppm)	1,4-Dichlorobenzene	1,2,4-Trichlorobenzene	Zinc (ppm)	1,4-Dichlorobenzene	1,2,4-Trichlorobenzene	Zinc (ppm)
1,4-Dichlorobenzene	6/90	ND	ND	0.24	ND	ND	0.10	ND	ND	0.02	ND	ND	0.11
	10/90	ND	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	NS
	12/90	ND	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	NS
1,2,4-Trichlorobenzene	6/90	ND	ND	0.10	ND	ND	0.02	ND	ND	0.02	ND	ND	0.11
	10/90	ND	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	NS
	12/90	ND	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	NS
Zinc (ppm)	6/90	ND	ND	0.10	ND	ND	0.02	ND	ND	0.02	ND	ND	0.11
	12/90	ND	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	NS
	3/91	ND	ND	NS	ND	ND	NS	ND	ND	NS	ND	ND	NS

KEY: \* - These wells were installed during the period April 16 through May 2, 1990.  
NA - Not applicable since these wells were not installed prior to these sampling dates.  
ND - Not detected at the applicable detection limit (see the analytical data for that firm).  
NS - This parameter was not included in the analysis.

DETECTION LIMITS:

PCB 1242 100 ppb  
PCB 1260 100 ppb  
1,2-Dichlorobenzene 10 ppb  
1,3-Dichlorobenzene 10 ppb  
1,4-Dichlorobenzene 10 ppb  
1,2,4-Trichlorobenzene 10 ppb  
Zinc 0.005 ppm

# Georgia Department of Natural Resources

205 Butler Street, S.E., Suite 1252, Atlanta, Georgia 30334

Joe D. Tanner, Commissioner  
Harold F. Rehels, Director  
Environmental Protection Division

July 11, 1991

## MEMORANDUM

**TO:** Jim Ussery  
Gwen Glass

**FROM:** Lael H. Butler *LHB*

**SUBJECT:** General Electric Company  
Rome, Georgia Facility  
Report on Fourth Quarter Sampling and Annual Summary - 1990  
Report on First Quarter Sampling - 1991

The referenced reports were received March 25 and April 29, 1991, respectively. A review of the data, conclusions, and recommendations contained in each report has been completed. The groundwater monitoring data has been included along with previous data on the attached tables. Review comments are provided for each report received.

### Report on Fourth Quarter Sampling and Annual Summary - 1990

#### 1. Primary Metals

Prior sampling events have detected cadmium, chromium, lead, and zinc above detection limits and established maximum contaminant levels (MCLs). Wells A-3, 4, 6, 7, 8, 10, B-2, C-6, 8, and D-1 have exceeded MCLs for lead and chromium (see attached Table 7). Well D-1 is the background well and is not located near any of the landfills.

#### 2. PCBs

PCBs have consistently been detected in wells A-4 and A-5 (which are located on the eastern side of Landfill A) in 1989 and throughout 1990. Total PCB concentrations have increased progressively each succeeding quarter (see attached Table 8).



## **MEMORANDUM**

**GE Rome**

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### **3. Chlorobenzenes**

Various chlorobenzene compounds have been detected in the shallow and deep flow zones in the Landfill A area throughout 1989 and 1990 (see attached Table 9). A new deep well, A-10, was installed on the southside of Landfill A between the March and June 1990 sampling events. This well is reported to be upgradient within the deep flow system and positioned to detect any downward migration of contamination. Well B-2 had one compound (1,2,4-trichlorobenzene) detected in the March, June, and September 1990 sampling events. No chlorobenzene compounds have been detected in any of the wells in the Landfill C area or in Well D-1.

### **Report Conclusions**

1. The installation of three new shallow wells in the vicinity of Landfill A has reportedly further defined the pattern of flow in the shallow aquifer and identified a groundwater divide (in the shallow aquifer) which isolates the shallow flow beneath Landfill A from the shallow flow under Landfills B and C.
2. The elevated concentrations for metals is attributed to turbidity in the unfiltered samples rather than to high concentrations of dissolved metals in the groundwater.
3. ~~PCB and chlorobenzene contamination reportedly appears to be confined to the shallow flow system in the Landfill A area and to Well B-2.~~ Well A-6 (a deep well on the northwest side of Landfill A) has periodically detected chlorobenzenes which potentially indicates that contaminant migration might be occurring into the deep flow systems.
4. During the September and December 1990 samplings, an oily organic separate phase liquid was present in (shallow) Well A-4.

### **Report on First Quarter Sampling - 1991**

#### **1. Primary Metals**

Lead was detected above the MCL in wells A-8, A-10, C-1, C-6 and C-7.

#### **2. PCBs**

PCBs were detected in wells A-4 and A-7 although in lesser concentrations.

# MEMORANDUM

GE Rome

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## 3. Chlorobenzenes

The deep wells on the southeastern side of Landfill A (Wells A-7, A-8, and A-9) have consistently detected chlorobenzenes. Well A-6 (a deep well on the north side of Landfill A) has also detected chlorobenzenes in the past three quarters. Chlorobenzenes were not detected in any of the Landfill B or Landfill C area wells or in the background well, Well D-1.

## Report Conclusions

1. Contamination with respect to organic constituents appears to be limited to the Landfill A area.
2. A film of oily organic fluid was again detected in Well A-4.
3. No contamination was detected in the sample collected from Well B-2.

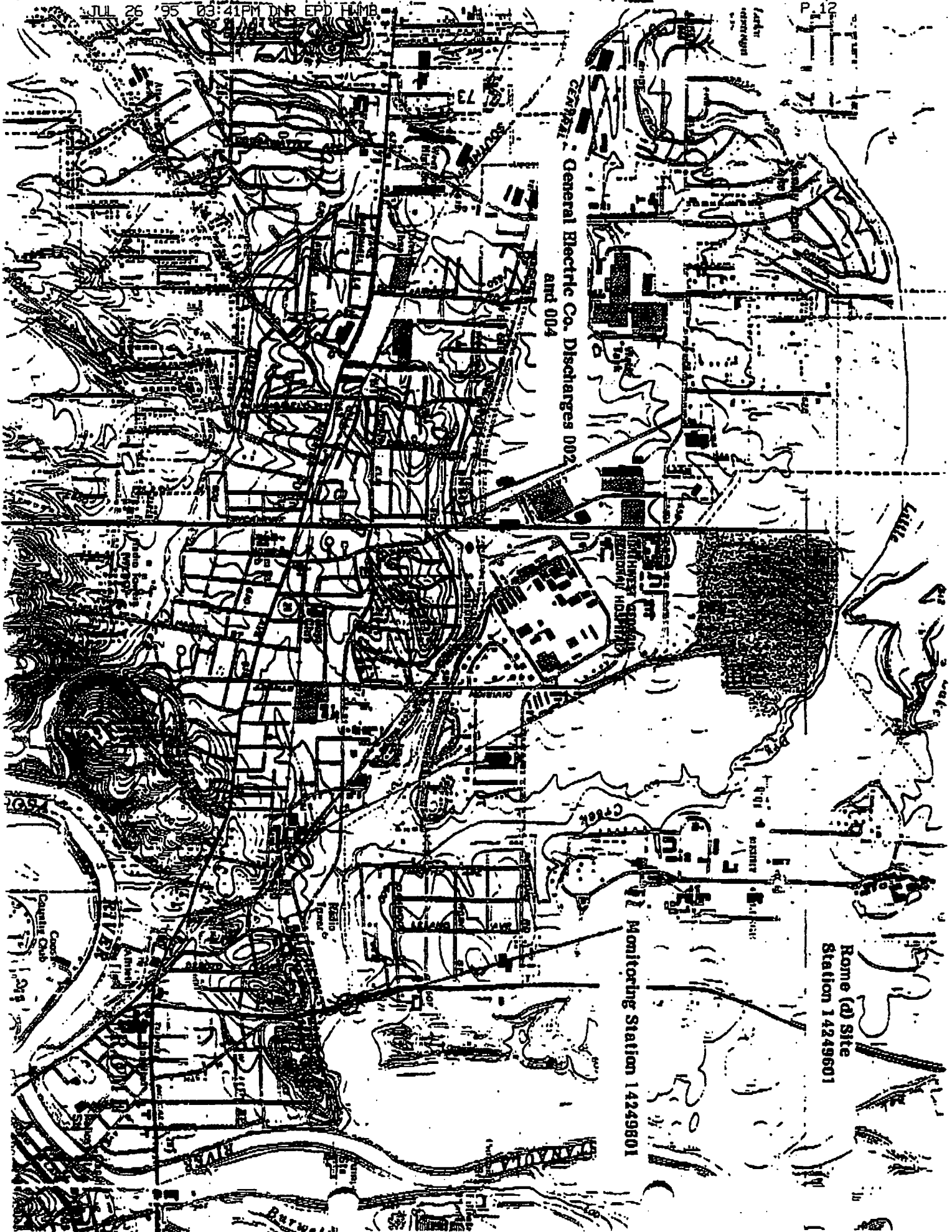
## CONCLUSIONS AND RECOMMENDATIONS

The data confirms that primary metals, PCBs and chlorobenzenes are contaminating the subsurface environment at the General Electric facility. Due to the proximity of this facility to Lake Conasauga (and ultimately the Oostanaula River) and to potential drinking water sources, corrective action is necessary.

Based on the 1990 annual and the first quarter 1991 reports, it is proposed that the GEPCD modify the existing Consent Order (which addresses corrective action at Well B-2) to include corrective action at Landfill A. Also, a split sampling event should be conducted at the next quarterly sampling event and include sediment sampling.

LB:cm

JUL 26 '95 03:41PM DNR EPD HMB



SITE/DATE	PCB 1254 (ug/kg)	PCB 1260 (ug/kg)	TOTAL PCBs (ug/kg)
Horseshoe Creek at Hanks Street 8/28/89 10/26/89	10.0K 6.0K	44.0 40.0	44.0 40.0
Little Dry Creek at U.S. 27 8/28/89 10/26/89	500.0K 400.0K	3300.0 3960.0	3300.0 4130.0
Coosa River: 1.6 miles downstream Rome WPCP 11/8/84 8/29/85 8/05/86 8/06/87	24.0 6.0K 10.0K 20.0K	6.0K 70.0 40.0 147.0	24.0 70.0 40.0

PCB's IN SEDIMENT DOWNSTREAM FROM GE IN ROME

RANDY MANNING

**/TYPE/MEMO/STREAM**

14249861  
34 18 11.0 805 10 51.0 3  
LITTLE OXY CREEK -- U.S. HIGHWAY 37 IN ROME  
15115 GEORGIA  
SOUTHEAST  
FLOYD  
830589  
03152163  
0000 FEET DEPTH

**Rome (d)**  
**Page 1 of 3**

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/TYP/AIBNT/STREAM

Rome (d)  
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14248601  
34 10 11.0 005 10 51.0 3  
LITTLE DRY CREEK - U.S. HIGHWAY 27 IN ROME  
13115 GEORGIA FLOYD  
SOUTHEAST 033500  
COOSA  
210AEPD 000010 03150103  
0000 FEET DEPTH

INITIAL DATE INITIAL TIME MEDIUM DEPTH-FT(SMK)		89/07/11 1145 WATER	89/08/28 1500 WATER	89/08/28 1520 SED	89/10/26 0932 SED	89/10/26 0940 WATER	89/11/30 0001 FISH	89/11/30 0002 FISH	89/11/30 0003 FISH	89/12/05 1100 WATER
01073 THALLIUM	TIS-WET						1.00K	1.00K	1.00K	
01092 ZINC	ZN, TOT	20K	13			20K				500K
01093 ZINC	SEDUG/KG			02.00	130.00					
01099 ANTIMONY	TIS-WET						1.00K	1.00K	1.00K	
01149 SELENIUM	TISMG/KG						1.00K	1.00K	1.00K	
32100 CHLORFORM	TOTUG/L		1.0K			1.0K				5.0
34237 BENZENE	SEDUG/KG			1.000K	1.000K					
34252 BERYLLIUM	TISMG/KG						1.000K	1.000K	1.000K	
34250 BETA BHC	TISMG/KG						.100K	.100K	.020K	
34203 DELTABHC	TISMG/KG						.100K	.100K	.020K	
34318 CHLORFORM	SEDUG/KG			1.000K	1.000K					
34355 ENDOSULF	TISMG/KG						.100K	.100K	.100K	
34308 BENDOSUL	TISMG/KG						.100K	.100K	.100K	
34305 AENDOSUL	TISMG/KG						.100K	.100K	.100K	
34370 ENDORHAL	TISMG/KG						.100K	.100K	.100K	
34474 SILVER	TISMG/KG						1.000K	1.000K	1.000K	
34004 PCB-1221	TISMG/KG						30.000K	10.000K	.250K	
34007 PCB-1232	TISMG/KG						10.000K	.250K		
34009 PCB-1240	TISMG/KG						30.000K	10.000K	.250K	
34070 PCB-1200	TISMG/KG						63.700	21.500	.570	
34074 PCB-1010	TISMG/KG						30.000K	10.000K	.250K	
34000 ALDRIN	TISMG/KG						1.000K	.100K	.020K	
34002 DDAHNET	TECHMET						4.000K	.400K	.000K	
34003 DNB PHTH	TIS-WET						1.000K	1.000K	1.000K	
34005 ENDRIH	TISMG/KG						.100K	.100K	.100K	
34000 HPCHUREP	TISMG/KG						1.000K	.100K	.020K	
34007 HEPTCHLR	TISMG/KG						1.000K	.100K	.020K	
34009 PCB-1234	TISMG/KG						30.000K	10.000K	.250K	
30074 ALPHABHC	TISMG/KG						.100K	.100K	.020K	
30110 DNB PHTH	TOTAL		10.000K			10.000K				10.000K
30112 DNB PHTH	MUD-DRY			200K	200K					
30200 TOT DDT	TISSUE						1.00K	.10K	.02K	
30404 DIELDRIN	TISMG/KG						.10K	.10K	.10K	
30407 TOXPHENE	FISH WET						10.00K	1.00K	.20K	
30401 PCB-1221	SEDUG/KG				120.00K					
30405 PCB-1232	SEDUG/KG				120.00K					
30407 AROCLOR	1242 FSH						30.00K	10.00K	.25K	

(SAMPLE CONTINUED ON NEXT PAGE)

/TPPA/AMENT/STREAM

14240801  
34 10 11.0 685 10 51.0 3  
LITTLE OAK CREEK -- U.S. HIGHWAY 27 IN ROME  
13115 GEORGIA FLOYD  
SOUTHEAST 033548  
COOSA  
2180AEPD 880819 83350183  
8808 FEET DEPTH

**Rome (d)**  
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# Georgia Department of Natural Resources

205 Butler Street, S.E., Floyd Towers East, Atlanta, Georgia 30334

J. Leonard Ledbetter, Commissioner

Harold F. Reheis, Assistant Director

Environmental Protection Division

January 28, 1988

## MEMORANDUM

TO: Jennifer Kaduck  
Program Manager  
Hazardous Waste Management Program

THRU: John D. Taylor, Jr.  
Branch Chief  
Land Protection Branch

THRU: Randolph D. Williams *RDW*  
Program Manager  
Site Investigation Program

FROM: Marlin R. Gottschalk *MRG*  
Unit Coordinator  
Site Assessment Unit

SUBJ: Transfer of General Electric Company (Rome, GA) File

By way of this memorandum, I am transferring to you the Site Investigation Program file on General Electric Company, Medium Transformer Department, Rome, Georgia (EPA ID# GAD003308145). This information may be pertinent to the Expanded Site Investigation (ESI) at the Coosa River site in Rome, Floyd County, Georgia, planned by the NUS Corporation.

If I can be of further assistance, please don't hesitate to contact me at (404) 656-7404.

MRG/sdh/050

Attachments: SIP File - General Electric Company (GAD003308145)  
Draft Study Plan - Expanded Site Investigation  
Coosa River Site  
Rome, Georgia

cc: Felicia Barnett, EPA, Atlanta, Georgia  
File: General Electric Company (GAD003308145) ✓